

REMARKS

Claims 1-26 have been examined and have been rejected under 35 U.S.C. § 103(a).

I. Rejection under 35 U.S.C. § 103(a) over U.S.P. 6,574,489 to Uriya (“Uriya”), U.S.P. 5,640,441 to Serrano et al. (“Serrano”), and EP 0 866 592 A2 to Brisebois et al. (“Brisebois”)

Claims 1, 14, 15, and 19 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Uriya, Serano, and Brisebois.

A. Claim 1

Claim 1 comprises a vibration control unit that generates a driving signal from an audio signal and comprises a vibration notification unit that vibrates according to the driving signal. On the other hand, none of the references (alone or in combination) suggest such feature.

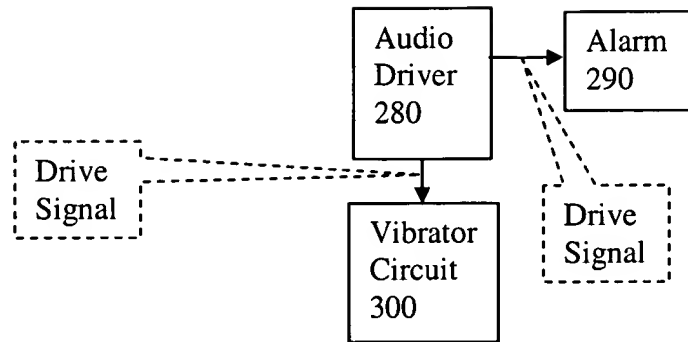
On page 2 of the Office Action, the Examiner acknowledges that Uriya does not teach the claimed vibration control unit, but she contends that Serrano does. Specifically, the Examiner contends that the explanation at column 6, lines 15-25, of the reference suggests generating a driving signal from an audio signal. Applicants respectfully disagree.

As shown in Fig. 3 of Serrano, the disclosed system comprises a current to voltage converter 230, an AC level detector 240, an alarm timer 260, a DC level detector 270, an alarm (or audio) driver 280, and an alarm 290. The current to voltage converter 230 outputs a voltage signal that corresponds to the current being drawn from the battery 210 due to the operation of the phone 200. (Column 5, lines 25-29).

The AC level detector 240 determines the status of the phone 200 based on the voltage signal that the converter 230 outputs. (Column 5, lines 50-53). When the voltage signal decreases from a first voltage value to a second voltage value for a predetermined period of time, the detector 240 outputs a “waiting for call state” (“WFCS”) signal. (Column 5, lines 53-57).

The DC level detector 270 monitors the voltage signal output from the current to voltage converter 230, monitors the current being drawn from the battery 210, and monitors the WFCS signal that the AC level detector 240 generates. (Column 6, lines 1-3). The DC level detector 270 generates an alarm start signal when (1) the detector 240 outputs the WFCS signal, (2) the voltage signal from the converter 230 increases from a third voltage value to a fourth voltage value, and (3) the voltage signal remains at or above the fourth voltage value for a predetermined period of time. (Column 6, lines 2-7). Also, the DC level detector 270 generates the alarm start signal when (1) the detector 240 outputs the WFCS signal, (2) the current drawn from the battery 210 increases from a first current value to a second current value, and (3) the current remains at or above the second current value for a predetermined period of time. (Column 6, lines 7-11).

When the DC level detector 270 outputs the alarm start signal, the audio driver 280 outputs a drive signal to drive the alarm (*i.e.*, a “screamer” circuit) 290 to provide an audible signal, which identifies an incoming call, to the user. (Column 6, lines 15-19). Also, a vibrator circuit 300 (not shown in Fig. 3) may be connected to audio driver 280 so that the driver 280 outputs a drive signal to selectively drive the alarm 290, the vibrator circuit 300, or both. Such a configuration is schematically illustrated below:



As described above, the audio driver 280 outputs a drive signal to drive the alarm 290 and/or the vibrator circuit 300 based on the alarm start signal, and the alarm start signal is output based on the amount of current drawn from the battery 200. Therefore, the audio driver does not generate a drive signal from an audio signal, as claim 1 requires.

In addition, Brisebois does not teach generating a driving signal from an audio signal. Specifically, in the reference, the system stores predetermined drive patterns in memory via the stored program 32 (Fig. 5) and inputs data relating to the type of signal being processed. (Column 7, lines 3-10). Then, one of the predetermined drive patterns is output to the stimulators 14 based on the type of signal. (Column 7, lines 10-15). For example, if the system is processing a dial tone, the system drives the stimulators 14 via the predetermined drive pattern shown in Fig. 8A. (Column 7, lines 28-31). On the other hand, if the system is processing a busy signal, the system drives the stimulators 14 via the predetermined drive pattern shown in Fig. 8E. (Column 7, lines 52-57). Clearly, the predetermined drive signals are not generated from the audio signal.

In light of the discussion above, Applicants submit that claim 1 is patentable over Uriya, Serrano, and Brisebois.

B. Claim 14

Since claim 14 depends upon claim 1, Applicants submit that it is patentable at least by virtue of its dependency.

C. Claim 15

Since claim 15 contains features that are similar to the features recited in claim 1, Applicants submit that claim 15 is patentable for similar reasons.

D. Claim 19

Since claim 19 depends upon claim 15, Applicants submit that it is patentable at least by virtue of its dependency.

II. Rejection under 35 U.S.C. § 103(a) over Uriya, Serrano, Brisebois, and U.S.P. 6,070,053 to Yamashita (“Yamashita”)

Claims 2, 10-13, 16, 17, 20, and 26 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Uriya, Serrano, Brisebois, and Yamashita.

A. Claim 2

Claim 2 states that (1) a driving signal (which is used to drive a vibration notification unit) is generated from an audio signal and (2) music is output as the audio signal. On page 5 of the Office Action, the Examiner acknowledges that Uriya, Serrano, and Brisebois do not suggest the features above, but she maintains that Yamashita does. Applicants respectfully disagree.

For example, Fig. 8 of Yamashita shows a radio communication device that inputs music from a music generator 10 (*i.e.*, a CD player), converts the music into music data having the appropriate format via the converting section 36, and stores the music data in the storage section 33. (Fig. 9 and column 7, lines 17-27). Then, when the communication device receives an incoming call, a ring tone corresponding to the stored music data is output via the speaker 7 to inform a user of the call. (Column 7, lines 28-35).

As discussed above in conjunction with claim 1, Uriya, Serrano, and Brisebois (alone or in combination) do not suggest generating a driving signal, for driving a vibration notification unit, from a generic audio signal. Therefore, the three references cannot suggest generating such a driving signal from a musical audio signal as described in claim 2. Furthermore, Yamashita does not cure the deficient teachings of Uriya, Serrano, and Brisebois.

Specifically, Yamashita merely discloses outputting music via a speaker 7 as a ring tone, and such concept is old and well know. On the other hand, as recited in claim 2, a musical audio signal is used to generate a drive signal for vibrating a vibration notification unit. As explained in conjunction with a non-limiting embodiment described in the present application, vibrating a vibrator 12 based on a musical audio signal enables the user to sense the music with both sound and vibration so that he or she can enjoy the music with a full ambient feeling. (Present application, page 10, paragraph 46). Such a sensation is similar to the vibration that a woofer creates when a stereo reproduces low frequency components of a musical piece.

Since Uriya, Serrano, Brisebois, and Yamashita (alone or in combination) do not suggest vibrating a vibration notification unit based on a musical audio signal, Applicants submit that claim 2 is patentable over the references.

B. Claim 10-13

Since claims 10-13 depend upon claim 2, Applicants submit that they are patentable at least by virtue of their dependency.

C. Claim 16

Since claim 16 depends upon claim 15, Applicants submit that it is patentable at least by virtue of its dependency.

Also, claim 16 states that an audio signal, which comprises music, is used to generate a driving signal and that a control circuit vibrates a vibrator based on the driving signal. Since such features are similar to the features recited in claim 2, Applicants submit that claim 16 is patentable for similar reasons.

D. Claims 17, 20, and 26

Since claims 17, 20, and 26 depend upon claim 16, Applicants submit that such claims are patentable at least by virtue of their dependency.

III. Rejection under 35 U.S.C. § 103(a) over Uriya, Serrano, Brisebois, Yamashita, and U.S.P. 6,259,935 to Saiki et al. ("Saiki")

Claims 3, 6-8, 18, and 25 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Uriya, Serrano, Brisebois, Yamashita, and Saiki.

A. Claims 3 and 6-8

Since claims 3 and 6-8 depend upon claim 2, and since Saiki does not cure the deficient teachings of Uriya, Serrano, Brisebois, and Yamashita with respect to claim 2, Applicants submit that claims 3 and 6-8 are patentable at least by virtue of their dependency.

B. Claims 18 and 25

Since claims 18 and 25 depend upon claim 16, and since Saiki does not cure the deficient teachings of Uriya, Serrano, Brisebois, and Yamashita with respect to claim 16, Applicants submit that claims 18 and 25 are patentable at least by virtue of their dependency.

IV. Rejection under 35 U.S.C. § 103(a) over Uriya, Serrano, Brisebois, Yamashita, Saiki, and U.S.P. 6,195,571 to Osuge (“Osuge”)

Claim 9 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Uriya, Serrano, Brisebois, Yamashita, Saiki, and Osuge. Since claim 9 depends upon claim 8, and since Osuge does not cure the deficient teachings of Uriya, Serrano, Brisebois, Yamashita, and Saiki with respect to claim 8, Applicants submit that claim 9 is patentable at least by virtue of its dependency.

V. Rejection under 35 U.S.C. § 103(a) over Uriya, Serrano, Brisebois, Yamashita, and U.S.P. 6,662,022 to Kanamori et al. (“Kanamori”)

Claims 4 and 5 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Uriya, Serrano, Brisebois, Yamashita, and Kanamori. Since claims 4 and 5 depend upon claim 2, and since Kanamori does not cure the deficient teachings of Uriya, Serrano, Brisebois, and Yamashita with respect to claim 2, Applicants submit that claims 4 and 5 are patentable at least by virtue of their dependency.

VI. Rejection under 35 U.S.C. § 103(a) over Uriya, Serrano, Brisebois, and Kanamori

Claims 21-23 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Uriya, Serrano, Brisebois, and Kanamori. Since claims 21-23 depend upon claim 16, and since Kanamori does not cure the deficient teachings of Uriya, Serrano, and Brisebois with respect to claim 16, Applicants submit that claims 21-23 are patentable at least by virtue of their dependency.

VII. Rejection under 35 U.S.C. § 103(a) over Uriya, Serrano, Brisebois, and Saiki

Claim 24 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Uriya, Serrano, Brisebois, and Saiki. Since claim 24 depends upon claim 15, and since Saiki does not cure the deficient teachings of Uriya, Serrano, and Brisebois with respect to claim 15, Applicants submit that claim 24 is patentable at least by virtue of its dependency.

VIII. Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Appln. No. 09/900,132

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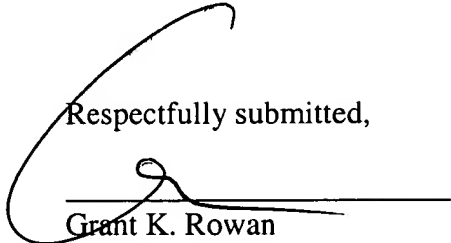
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Respectfully submitted,



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